British Medical Journal.

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THE LIBERTIES OF THE PROFESSION.

IN the BRITISH MEDICAL JOURNAL of March 21st (p. 566) we directed the attention of all medical practitioners to certain proceedings under the Insurance Acts reported in the SUPPLEMENT of that week (p. 122) under the heading, "A fatal case of diphtheria." We recur to the subject because it concerns the rights and liberties of the profession. The report in question was that of a Committee of Inquiry, consisting of a barrister-at-law and two medical practitioners, appointed by the Minister of Health in accordance with the Regulations made under the Insurance Acts, to investigate the professional conduct of a London insurance practitioner (designated by us as "Dr. Z") in respect of his treatment of an insured patient. The London Insurance Committee brought a charge of gross negligence against Dr. Z in failing to diagnose diphtheria until a late stage of the disease, and demanded his removal from the medical list for the County of London. The Inquiry Committee, in its report to the Minister, submitted a full and careful account of its findings of fact, and its findings, we may remark, put a very different complexion upon some of the alleged facts of the case and grounds of complaint formulated by the London Insurance Committee. The Inquiry Committee included in its report certain observations. Of these the one to which the Ministry of Health should have attached great importance, as going to the root of the matter, is as follows: "When a charge of gross negligence is made against a doctor it seems just to avoid an attitude of mind which—to use a colloquial phrase—savours of being wise after the event, and not to attach undue weight to the death of the patient with the obvious exception of cases in which the death can be proved to be attributable to such negligence." In the course of its six inferences of fact the Inquiry Committee exonerated Dr. Z from the very serious allegations made against him. The furthest it went in criticism was the following reference to Dr. Z's omission to take a swab from the throat: "... we can only describe the fact as unfortunate that the respondent, in his persistent diagnosis of tonsillitis, did not adopt this further test for the purpose of checking his opinion." The Committee, moreover, found that "no possible suggestion can be made against the respondent for any neglect in attendance," and it noted the great care exercised by him in the case. "In our opinion," the Committee concluded, "the charge of gross negligence wholly fails. The facts indicate the possibility of criticism of the respondent in the matter of his professional skill, but an illness which commences with tonsillitis and is complicated by the subsequent onset of diphtheria and Vincent's angina is probably not of common experience, and adds to the difficulty of making a correct diagnosis. We think that the complainants were not justified in making their representation and thus putting in motion the machinery which involved the inquiry held by us. In pursuance of this view we recommend that the complainants be ordered to pay to the respondent his taxed costs of the inquiry."

The Minister of Health, in pronouncing judgement, agreed that Dr. Z should receive his costs, but, in complete disregard of the tenor of the Inquiry Committee's report, informed the complainants that Dr. Z ought to be fined £20, and in order to ensure compliance with this opinion the Minister has withheld £20 from the money payable to the Insurance Committee. The letter from the Ministry of Health to the London Insurance Committee sought to justify the infliction of this fine by reference to some advice tendered from an unnamed quarter. "The Minister," it said, "is advised that some of the symptoms from which, according to the report of the Inquiry Committee, this patient suffered, were such as should have suggested the presence of diphtheria. . . ."

The annotation in the JOURNAL of March 21st ended by inviting the Ministry of Health to send us any explanations it might wish to offer of this strange action; but so far the invitation has met with no response. A question has, however, been asked in the House of Commons, as reported in our Parliamentary columns this week (p. 676). Mr. Herbert Williams, member for Reading, asked the Minister of Health on March 26th why penalties of £10 and £20 were imposed on two doctors, who had been accused by the London Insurance Committee of gross negligence in cases of appendicitis and diphtheria respectively, but had been found innocent by a committee appointed by the Minister of Health. Mr. Neville Chamberlain's reply must be regarded as most unsatisfactory. In particular we would draw attention to two passages. Mr. Chamberlain said that the Inquiry Committee's findings of fact indicated that in one case (clearly that of Dr. Z) "the doctor had failed to exercise reasonable care"; and, later, he said that "there was no ground for the statement that the practitioners were found innocent." As Dr. Harry Roberts remarked in his trenchant letter printed in our last issue (p. 631), "If we stand this we shall stand anything."

On the day before the Minister put forward his defence in the House of Commons this matter had been brought formally to the notice of the British Medical Association, as recorded in the proceedings of Council published in the present issue of the SUPPLEMENT. It arose in connexion with the final draft of the Memorandum of Evidence to be submitted by the Association to the Royal Commission on National Health Insurance. Dr. Brackenbury, in studiously temperate terms, submitted an additional paragraph which he had drafted in regard to the judicial or semi-judicial functions of the Ministry of Health. The paragraph makes reference to the inexplicable action of the Ministry in imposing penalties on practitioners, and says it is exceedingly disquieting to find that, though the machinery set up in agreement with the profession is used, and the agreed procedure is followed, "there are cases in which there seems little or no relationship between the decisions of the Ministry and the reports or recommendations of the bodies on which action is supposed to depend." Emphasis is laid on the point that a strict distinction must be drawn between professional conduct in the attention given to a patient, and the nature of the exact professional treatment given to the patient; and the paragraph closes with a declaration that the propriety or otherwise of any particular method or line of treatment ought not to be made the subject of investigation in connexion with the insurance service.

Dr. Brackenbury told the Council that the grievance would be plainly stated to the Royal Commission by the Association's witnesses, who would say that the profession could not tolerate this sort of procedure if it went on without explanation from the Ministry. These assurances, together with Dr. Dain's significant

remark that the Insurance Acts Committee would have some very definite things to say on the subject to the Ministry of Health, will doubtless be read with satisfaction, not by insurance practitioners alone, but by the medical profession at large. Our profession is not quick to express its feelings; but, unless we are misinformed, it is already gravely concerned for the defence of its freedom against this new kind of attack.

THE EXPECTATION OF LIFE IN GLASGOW.

MR. WILLIAM JONES, secretary to the public health department of the Corporation of Glasgow, has prepared and published two new Glasgow life tables—one based on the census of 1871 and the deaths registered in the three years 1870-72, the other based on the census of 1921 and the deaths in 1920-22. He is to be congratulated on the completion of a very troublesome task, and, as pointed out in a preface by Dr. A. K. Chalmers, it places Glasgow in what is surely a unique statistical position in having life tables covering a hundred years. The first was published in 1829, and was based on data for the six years 1821-27. The figures, of course, are not strictly comparable as between the successive tables, owing in the earlier data to errors as to population and in the later to extensive additions to the area of the city by absorption, mainly of adjoining burghs. But broadly the statistics do give a very striking picture, first, of deterioration of health conditions owing to the extraordinary growth of Glasgow during the industrial revolution in the earlier part of the nineteenth century, and next, of improvement of health conditions in the past half-century. As is customary in such tables, the figures for the two sexes are given separately.

In 1821-27 the expectation of life at birth was in males 34.12 years and in females 36.64 years. By 1870-72 the corresponding figures were reduced to 30.93 and 32.61 respectively. In other words, the outlook as to survivorship was three to four years worse than it had been forty years earlier. But by 1881-90 the loss was more than wiped out, the expectation being for males 35.18 and for females 37.70, which is just about a year better than in 1821-27. In the next forty years the improvement was very notable, the male expectation being no less than 48.41 years and the female 53.19.

These figures all relate to the whole lifetime, from birth onwards. But so great is the mortality in the early years of life compared with the later that the survivors at the age of 10 years have an average prospect of life longer than the average expectation at birth. Starting therefore to make comparisons at 10 years old, and beginning with the life table of 1821-27, the expectation of life amongst males was 42.27 years, or fully eight years greater than at birth, and in females 45.24, or over eight and a half years greater. It is interesting to note that at this age period the fall in expectation as between 1821-27 and 1870-72 was not so great as in infants, being only 2.12 years in males, though in females it was 3.41 years. Coming to the life table of 1881-90, the 10-year-old children had made a great advance—to 37.70 years' expectation in males and 45.44 in females, which latter figure, however, is only 0.20 better than the original 45.24 of 1821-27. Finally, by 1920-22 the expectation of male children who had survived through the first decade had risen to 50.81 years and of females to 53.19, so that, adding the first ten years which they had already lived, their mean age at death would be 60.81 in males and 63.19 in females.

Under the heading, "The increase in life capital," Mr. Jones submits some striking mass figures, following which he writes: "The present population of the city will, therefore, live among them approximately twenty million more years of life than a similar number of persons fifty years ago, fully nine millions being among males and ten and three-quarter millions among females," but he points out that "proportionately the added years are mainly of adult ages." The details emphasize this reservation. The percentage increase at age 0-4 inclusive is only 2.9, while at 35-54 inclusive it is 30.2, and over 75 years the gain is only 5.2 per cent.

In comparing the life tables of 1920-22 relating to Glasgow, Liverpool, and Manchester, the curious result is shown that in males Glasgow has a slight advantage over both towns (much less over Manchester than Liverpool) at the ages of from 12 to 42 years. Beyond the latter age both Lancashire cities, especially Liverpool, have an appreciable advantage. In females the position is different. At all ages from 12 to 82 (with one fractional exception) both Liverpool and Manchester make a better showing than Glasgow, especially from 12 to 27 years, where Glasgow's expectation is less favourable to the extent of from one year to a year and a half.

Dr. Chalmers makes a most interesting suggestion as to future life tables. He is very strongly disposed to think that they should be built up, not on the general population and its deaths, but on populations grouped according to the number of rooms they occupy and the deaths occurring among them, and Mr. Jones gives some relevant figures based on the census population of 1911. The figures show the expectation of different ages from 10 to 65 according to whether the occupied houses had one, two, three, or four and more apartments, the advantage being with the larger houses. Dr. Chalmers points out that "at 20 years of age the expectation of males in one apartment families was 2.28 years less than the average, and 5.18 years less than in families occupying four apartments and upwards. At 65 these differences almost wholly disappear." With wise caution, however, he does not assume that such differences are to be wholly attributed to housing, and he concludes by observing that "the future of public health administration must concern itself with the elucidation of the causes of these differences."

NEW DRUGS FOR OLD.

THE use and abuse of drugs was the subject of an animated discussion at a meeting of the Hunterian Society on March 30th, when Mr. H. W. Carson was in the chair. Professor W. E. Dixon, after a reference to the prevailing "therapeutic nihilism" which condemned drugs of all kinds as valueless, said that, while students in this country were taught diagnosis as they were taught it in no other, the teaching of therapeutics was inadequate. A French professor who had been in London for three months said to him that the great difference between French and British medicine was that "we know what to do when we do not know what is the matter with the patients; you know what is the matter with them, and do not know what to do!" Patients were less interested in diagnosis than in treatment, and the physician who had not been properly taught the art of healing was apt to resort to the circulars he received from wholesale druggists with regard to the value of substances the nature and composition of which was sometimes not even stated. In passing, Professor Dixon said a word about vitamins; after stating that fat-soluble vitamin was fixed

in association with the cholesterol of the fats, and was increased as the result of the action of ultra-violet rays, he imagined a future in which mercury-vapour lamps would be suspended over the dining table, throwing down rays to vitalize the food before it was taken! In chemotherapy he found the new outlook in medicine, but chemotherapy must advance further to the production of substances which would be specific in their action against micro-organisms and would not, as did most of the substances now used, kill the body tissues at the same time. Dr. H. H. Dale said that although his time was spent in the laboratory he was not so closely bound up with the scientific method as to demand that the choice of drugs must be limited to those concerning which the fullest scientific knowledge was available. The use of drugs on a supposedly scientific basis was not without danger, which was in many ways greater than that attaching to the use of drugs on the basis of careful clinical experience, for it was very easy, by false and superficial analogies, and by the facile acceptance of any kind of specious explanation, to admit all kinds of things as playing a part in real scientific treatment, whereas in truth what was being done was more irrational than a procedure based upon an enlightened and not too conservative empiricism. At the same time, vague impressions as to efficacy could not be taken as a safe basis for the reasonable use of drugs. Quinine was known to be a specific against the malarial parasite, but what was to be said for the wide use of quinine by the public, largely at the instigation of the medical profession, as a prophylactic against all kinds of catarrhal infections, especially epidemic influenza? There was never a threatened epidemic of influenza but some journal published an interview with "an eminent Harley Street specialist," who advised taking quinine in the form of ammoniated tincture. What real ground was there for the suggestion that it had any prophylactic effect? If there was no real ground the attempt so to use it was an abuse. Again, potassium iodide was known to have a definite specific action on certain forms of chronic infection, particularly tertiary syphilis, but it had come to figure in the list of therapeutic agents as having a general value for reducing swellings and promoting the absorption of effusions of almost every kind. Was there any real basis for that belief? If not, it must be ranked as an abuse of a valuable drug. The salicylates had a specific action in acute rheumatism, but was it not an abuse to prescribe salicylates haphazard for any kind of painful condition of unknown etiology? Medical men were exposed at the present day to some danger on account of their genuine modesty. The people who introduced new drugs had learnt to get at the medical profession on the side of its modesty, for a medical man was prone to receive with quite undue respect any kind of plausible jargon which on the face of it appeared scientific. He quoted some words written by an eminent leader of the profession, now dead, in an introduction to a book which was supposed to give a scientific account of colloids and their use in medicine. This leader, for whom he had the greatest respect, wrote: "It is an obvious desideratum that the drugs employed to combat disease should be in the colloidal state." If he had put it in exactly the opposite way—if he had said that since bodily structures and fluids are colloidal it is an obvious desideratum that any drug should be in the crystalloid state—it would have been just as true and convincing, perhaps even more so. While ready to admit that the colloidal state for certain kinds of medication might have great advantages, and that at the back of it all there was something very valuable from the therapeutic point of view, it was often, Dr. Dale concluded, supported by such a parade of terms from physiochemistry and biochemistry, on the lips of people both inside and outside the medical profession, that it was really time that something was done to rescue from abuse what might be a very valuable idea in treatment. The ensuing discussion was carried on with great animation, and the clocks of Cheapside were approaching midnight by the time the two openers had replied to some little thrusts at the scientific as opposed to the clinical method.

THE NATURE OF INHIBITION.

IT is a well recognized physiological fact that certain nerve impulses cause a diminution or cessation of activity in the structures upon which they act, but the actual mechanism of this process of inhibition is obscure. In the current number of *Brain* Dr. E. D. Adrian, F.R.S., discusses the various theories which have been advanced as the result of work on the subject in recent years. There are two forms of inhibition, peripheral and central, but it is possible that the differences between them are more apparent than real. Peripheral inhibition is exemplified by the action of the vagus on the heart and by the action of the sympathetic on plain muscle—for example, of the intestine. Now this action of the sympathetic is dependent, as is all sympathetic action, on the liberation of adrenaline at the site of action, probably at the myoneural junction. It is suggested that the inhibitory action of the vagus upon the heart is due to the formation at a synapse or myoneural junction of an inhibiting substance analogous to the adrenaline which is produced by sympathetic activity. That this conception is not entirely theoretical is shown by the experiments of Loewi, who found that the fluid coming from a heart which had been inhibited by vagal stimulation had the property of inhibiting another heart into which it was introduced. Similarly, sympathetic stimulation is said to yield a fluid capable of producing a sympathetic (that is, accelerating) effect on another heart, and it is argued that in the one case an "inhibiting substance," and in the other a "sympathetic substance," must have passed into the fluid. Should these experiments be confirmed, further research will be required into the chemical nature of the "substances" and their mode of action on the muscle fibre. With regard to this last point Adrian refers to a recent confirmation by Samojloff of the experiments by Gaskell on the heart of the tortoise. It is known that during the passage of a contraction through the auricular muscle the active part of the muscle is electro-negative to the neighbouring inactive part, and Gaskell showed that if the auricle was inhibited by stimulation of the vagus the opposite electrical condition prevailed, the inhibited part of the auricle being electro-positive to the rest of the muscle. This alteration of the electrical state during inhibition Gaskell related to a chemical change, and it is possible that such a chemical change is a result of the liberation of the "inhibiting substance." Inhibition as a function of the central nervous system was shown by Sherrington to be a fundamental feature of all reflex movements. If the quadriceps muscle is caused to contract reflexly, as in the knee-jerk, such a contraction is accompanied invariably and simultaneously by relaxation of the antagonistic hamstring muscles—that is, the antagonists are reflexly inhibited. Strychnine and tetanus toxin abolish the reflex inhibition of the antagonists, and both prime movers and antagonists are thrown into powerful contraction in the reflex spasms seen under the influence of these poisons. Sherrington proved that the seat of the inhibitory process in reflex movements is within the spinal cord, and it is conceivable that the inhibition is due to the release at certain synapses in the reflex arc of a specific inhibiting substance such as has been postulated in the case of peripheral inhibition. There is, however, another possibility. If conduction in the central nervous system is governed by the same laws as conduction in peripheral nerves, then, following the passage of any impulse, there must occur a "refractory state" in the conducting path during which the path is incapable of conduction, and is in a state of rest or recuperation. It is

suggested that through the existence of synaptic connexions between the pathways to the prime movers and the antagonists, the impulse which causes contraction in the prime movers may set up a refractory state in the path to the antagonists. All stimuli being thus prevented from reaching the antagonists, these muscles relax at the same time as the prime movers contract. This theory, which has some experimental support, would therefore explain reciprocal inhibition in reflex actions on the physical basis of a refractory state instead of assuming the production of an entirely hypothetical chemical "inhibiting substance."

THE GOLD TREATMENT OF TUBERCULOSIS.

OUR readers will, we feel sure, be grateful to Professor Moellgaard of Copenhagen for the trouble he has taken to prepare the account of the treatment of tuberculosis by the gold salt he introduced some time ago, and to which he gave the name "sanocrysin." The use of heavy metals (gold, mercury, copper, and bismuth) for attacking the tubercle bacillus in the body has engaged the attention of many workers during the last twenty or thirty years, but the results have been inconclusive. Professor Moellgaard advances evidence that the gold salt he uses gives encouraging results in certain types of tuberculosis. It will be seen that towards the end of his paper (p. 647) he says that the curative results obtained in the animal experiments have been secured mostly in cases of the exudative pneumococcic type of tuberculosis of the lungs. This type was chosen in order to avoid the variations well known to occur in the chronic type. Other experiments have demonstrated that it is possible to cause typical "productive" tuberculosis to heal in its earliest stages, with sclerosis and calcification, and clinical experience has shown that cases of acute extensive miliary tuberculosis of the lungs can be brought into a condition favourable for healing. The term "productive" tuberculosis puzzled us, and we therefore applied to Professor Moellgaard for an explanation, which he has been good enough to supply. The distinction between exudative and productive tuberculosis of the lungs has reference, he says, to Aschoff's views of the pathological anatomy of pulmonary tuberculosis; these views have been generally adopted in Scandinavia in so far as regards the distinction between exudative and productive phthisis, because the distinction is confirmed by *x*-ray examination. He applies the term "exudative tuberculosis" to caseous pneumonia in all its stages, not only as a large lobular infection, but as a pneumonic process around other tuberculous foci. These conditions are termed "exudative" because their principal features are exudation of fibrin and white blood corpuscles accompanied by desquamation of the alveolar epithelium, as in the case of other forms of pneumonia. In the *x*-ray picture they appear as soft formless infiltration like wool, and there is no pleurisy. By "productive" tuberculosis is understood a process the principal feature of which is the building up of new (fibrous) tissue and the production of real tubercles. The *x*-ray picture shows a spotted and striped infiltration with sharper outlines than in the exudative type. Professor Moellgaard regards the distinction between these two forms as very important in treatment by sanocrysin, because the results of the treatment as shown by the *x* rays are different. In the exudative cases the infiltrations in the picture disappear almost completely, but in the productive cases the infiltrations grow sharper under the sanocrysin treatment because of the fibrous tissue that is formed. Whether the expectations built upon sanocrysin are fulfilled or not, the line of pharmacological reasoning on which Professor Moellgaard bases the selection of gold, and of this particular salt of it, will be found both interesting and instructive. The drug is not yet available for general use, but limited supplies have been received by the Medical Research Council, and have been tested in certain clinical units. The report on the therapeutic results will, we understand, be made available before long.

ILLNESS AND DEATH OF JOHN HUNTER.

AN abstract of Sir D'Arcy Power's Hunterian Oration on "John Hunter as a man" was published in our columns on February 21st (p. 379). We then gave some idea of the gist of his address, but time and space forbade such a leisurely consideration of it as its merits deserved. We have now had an opportunity of studying its full text in a well printed pamphlet, and of appreciating the quaint illustrations, reproduced from Jesse Foot's *Life*, by which it is adorned. The author of the last mentioned scurrilous work had a considerable practice among sufferers from venereal disease, but no valid claim to be considered as a rival of Hunter, whom he consistently abused, while he denied to him all originality and attributed the authorship of his works to Tobias Smollett. The Orator justified his choice of a subtitle—"A martyr to science"—by bringing forward evidence that John Hunter's long and severe sufferings were due to the syphilitic infection which followed his self-inoculation. This was, indeed, an outstanding feature of the Oration. No new literary material was available, but Sir D'Arcy Power reviewed in turn the record of each illness from which Hunter suffered, and stated his opinion that the symptoms were indications of syphilitic disease of the arteries at the base of the brain. This view may be right; it is impossible to declare it erroneous, so that it may be held out of place to question it. Yet if Sir D'Arcy Power's view becomes established, the writings of Hunter may come to be regarded as the products of a sick brain. But is such a conclusion necessary? Cases involving the same question are common—that is to say, infection by syphilis, the manifestations arrested in the early secondary stage by mercurial treatment, and in later life symptoms indicating arterio-sclerosis. It is to be remembered that Hunter's brother William had died at the same age, 65, after presenting similar symptoms. Hunter inoculated himself in 1767. He died on October 16th, 1793. His own account of the results of his inoculation includes an expression of his opinion thereon—"The time the experiments took up, from the first insertion to the complete cure, was about three years" (Works (Palmer), 1835, ii, 419, para. 3). His body, including the brain, was examined *post mortem* without any lesion being noted which would now be certainly attributed to syphilis. The viscera of the belly and head were found loaded with blood, but otherwise nearly in a natural state, with the exception of the carotid arteries and their branches within the skull, which were in parts thickened and ossified. In the chest the left lung had become attached to the costal pleura by old and firm adhesions; but the heart was found to be the chief seat of disease. The pericardium was unusually thickened, but did not contain much fluid. The heart itself was small, appearing too little for the cavity in which it was contained; its diminished size was the result of wasting, and not of strong contraction of its fibres. Two opaque white spots were seen on the left auricle and ventricle respectively. The muscular structure of the organ was pale and loose in texture. The branches of the coronary arteries which ramify through the heart were converted into long tubes, with difficulty divisible by the knife. The mitral valves were much ossified. The aorta was somewhat dilated, its valves thickened and wanting pliancy, and the inner surface of the artery was studded with opaque and elevated white spots (Works (Palmer), 1835, i, 132). It may fairly be asked what firm grounds there are for going beyond the statement that Hunter suffered from angina pectoris due to arterio-sclerosis. Both Sir William Osler and Sir James Mackenzie referred to Hunter as a type of

arterio-sclerosis without adding anything as to syphilis, Mackenzie going on to remark that the brain was not involved. Sir D'Arcy Power has gracefully dedicated the reprint of his own oration to a former Hunterian Orator (1889), his own well beloved father, Henry Power, ophthalmic surgeon to St. Bartholomew's Hospital, whose ability, as well as his personal charm, is manifest again in this worthy successor.

THE STRUCTURE OF THE ATOM.

IN the Friday evening discourse at the Royal Institution last week Sir Ernest Rutherford unfolded the fascinating story of the inquiry into the structure of the atom, and the nature of the forces which surround its nucleus, which has been proceeding at the Cavendish Laboratory, Cambridge. During the past year he and his co-workers continued to bombard the atoms of various elements with the alpha particles of radium or radio-active substances. The alpha particle is the most energetic projectile known; it has a velocity of 10,000 miles a second, and it is capable of ploughing its way through the structure of any atoms in its path. The atoms of the different elements all have a minute charged nucleus, surrounded at a distance by a number of electrons in motion. Sir Ernest Rutherford represented the nucleus by a small handball on the lecture table, and said that the nearest electron on this analogy would be about as far away as the distant wall of the theatre. By the law of probability, therefore, the collisions of alpha particles with the charged nucleus cannot be frequent, and it has been necessary to make very numerous observations of the effect of bombardment in order to discover what happens when the alpha particle gets into the intense electric field of the nucleus. From a study of the angle of deflection of the particle in such circumstances it has been hoped to find out what it is that holds the atom in equilibrium, the laws of force which operate between the alpha particle and the charged nucleus, and the nature of nuclear structure. On the basis of experiments on aluminium and uranium, Sir Ernest Rutherford put forward the hypothesis that each nucleus of an atom is surrounded at a little distance by a circle of electrically charged doublet-satellites—a sort of Saturn's ring—continually rotating. It was, however, easy to get on an entirely wrong track, and to make illusory discoveries, a good deal harder to disprove than to make. Patient investigation has been undertaken by Mr. Blackett, under Sir Ernest Rutherford's direction, and a long series of photographs of bombardments have been produced by an automatic camera device, whereby the tracks of half a million alpha particles have been studied. Now and then a disintegrating collision has been observed, and the story of it has been read in the scattering and deviation of the straight luminous lines on the photographic plate. So far it has not been possible to say what happens to the alpha particle after its collision with the nucleus. Sir Ernest Rutherford suggests, on the basis of eight photographs which have been obtained of a disintegrating collision between the alpha particle and the atoms of nitrogen, that the alpha particle may be captured by the nucleus as a result of what would be called in military strategy an encircling movement. A proton is ejected, and its fainter track can be discerned; but unless, in Sir Ernest Rutherford's words, an unseen electron has "dodged off," the alpha particle which is driven into the recoiling nucleus is imprisoned within its system. The result of bombardment by alpha particles, therefore, may be a synthesis, a building up or replacement, rather than a disintegration, in the case of a light nucleus. But years have been spent upon this study, and more years will have to be spent before the riddle of atomic architecture is solved. The term "proton"—meaning rudiment—has been borrowed by the physicists from the biologists.

MEMORIAL TO SIR WILLIAM MACEWEN.

WE published last week (p. 615) the first list of subscribers to the fund to establish a memorial in Glasgow to Sir William Macewen. The amount announced in the list was £1,550, or about half that desired to carry out the three objects of the memorial—namely, a bust for the University with a replica for Lady Macewen, a Macewen memorial lectureship, and a Macewen medal or prize in surgery for students. We feel sure that many members of the British Medical Association, remembering Sir William Macewen's great services to it, will be anxious to subscribe. They may send their gifts to the Financial Secretary of the British Medical Association (Mr. L. Ferris-Scott), 429, Strand, London, W.C.2, who will forward them to the treasurer of the fund, Mr. James Macfarlane, D.L., LL.D., Wesleyan Street, Glasgow, S.E. Cheques and postal orders should be made payable to the Sir William Macewen Memorial Fund.

BRITISH CONGRESS OF OBSTETRICS AND GYNAECOLOGY.

WE announced three weeks ago that the fifth British Congress of Obstetrics and Gynaecology would be held in London on Wednesday, Thursday, and Friday, April 22nd, 23rd, and 24th, under the presidency of Dr. H. Russell Andrews. It has been promoted by the Section of Obstetrics and Gynaecology of the Royal Society of Medicine, London, the Edinburgh Obstetrical Society, the North of England Obstetrical and Gynaecological Society, the Midland Obstetrical and Gynaecological Society, the Section of Obstetrics and Gynaecology of the Royal Academy of Medicine, Dublin, and the Ulster Medical Society. The chairman of the executive committee is Dr. T. W. Eden, and the treasurer is Mr. T. G. Stevens; the other members are Professor W. Blair Bell (Liverpool), Dr. R. W. Johnstone (Edinburgh), and Professor Sir Ewen J. Maclean (Cardiff). The official guests are Professor J. Whitridge Williams (Baltimore) and Professor W. W. Chipman (Montreal). The meetings will be held at the house of the Royal Society of Medicine. The meetings in the morning and afternoon of the first day will be devoted to a discussion on the prognosis and treatment of puerperal sepsis. Two reports on the subject have been drawn up—one by a committee of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine, and the other by a committee of the North of England Obstetrical and Gynaecological Society. Copies of these reports can be obtained from Mr. Clifford White, one of the honorary secretaries of the Congress, if application is made to him before April 10th. At the morning session communications will be made by Sir Ewen J. Maclean on puerperal sepsis in Wales and by Dr. Gibbon Fitzgibbon and Dr. J. W. Bigger on a clinical and bacteriological investigation of puerperal fever, and Dr. L. P. Lockhart will relate the results of bacteriological examinations during pregnancy. A discussion on puerperal sepsis will be opened in the afternoon by Professor J. Whitridge Williams. At the morning and afternoon sessions on Thursday and at the morning session on Friday individual papers will be read; on the afternoon of Friday operations will be performed at most of the principal hospitals. A pathological exhibition will be open during the whole of Thursday and Friday, and members who wish to exhibit specimens are requested to communicate at once with the secretary of the pathological committee of the Congress, Dr. Everard Williams, 5, Wimpole Street, W.1. There will be a luncheon on Wednesday, and in the evening the President and Mrs. Russell Andrews will hold an "at home" at the Royal Society of Medicine. The Congress dinner will take place on the evening of Thursday. Further particulars can be obtained from the honorary secretaries, Mr. Clifford White, F.R.C.S., 62, Harley Street, W.1, and Mr. J. Barris, F.R.C.S., 50, Welbeck Street, W.1.